

THE DIPTERA OF THE TERRITORY OF NEW GUINEA. II.

FAMILY TIPULIDAE.

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(Communicated by Frank H. Taylor.)

(Twenty Text-figures.)

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The very interesting series of Tipulidae discussed herewith was collected in greater part by Mr. Frank H. Taylor, a small number of specimens being taken by Mr. S. V. Bayley and by Dr. H. Champion Hosking. The majority of the specimens were taken at Keravat, Rabaul, and at an altitude of about 1,000 feet on Mount Toma, all located on the Gazelle Peninsula of New Britain. Fewer specimens were taken on Makada Island, of the Duke of York Group, east of the Gazelle Peninsula. The types and uniques have been returned to Mr. Taylor for incorporation in the collection of the School of Public Health and Tropical Medicine of the University of Sydney. I wish to express my very deep gratitude to the Director, Professor Harvey Sutton, of the School of Public Health, and to my good friend and co-worker on the Diptera, Mr. Frank H. Taylor, to whom I express my deepest thanks for many appreciated favours.

TIPULINAE.

CTENACROSCELIS CONSPICABILIS ANGUSTILINEATA, n. subsp.

♀. Length about 25 mm.; wing, 30 mm.

Characters as in typical *conspicabilis* Skuse (North-eastern Australia), differing in slight details of coloration, especially the conspicuous brown median praescutal vitta, which is yellowish in the typical form; in the present case, it is much darker than the brownish-grey intermediate stripes; lateral praescutal stripes narrowly bordered by yellow. Pleura yellow, without dorsal brown stripe; fore coxae and ventral sternopleurite restrictedly and vaguely darkened. Abdomen with the tergites unbrightened, except laterally.

Holotype, ♀, Rabaul, January, 1933 (F. H. Taylor).

It is possible that the present fly represents a valid species, rather than a race. The antennae have the first flagellar segment elongate, exceeding one-half the second; lower faces of flagellar segments but little protuberant, with a pair of short setae at near midlength.

CTENACROSCELIS GLOBULICORNIS, n. sp.

Belongs to the *umbrinus* group; flagellar segments, ♂, very conspicuously produced on ventral side into nearly globular lobes, each tipped with a long seta; pleural stripe distinct; ventral pleurites and coxae spotted and streaked with pale brown.

♂. Length about 21 mm.; wing, 25 mm.

Frontal prolongation of head brownish-yellow above, darker brown beneath and on sides; nasus long and conspicuous; palpi brownish-black. Antennae with scape dark brown; pedicel pale yellow; flagellum black; flagellar segments beyond the first very strongly produced to appear almost globular, in degree exceeding that of the *serratus* group; a long conspicuous seta at apex of protuberance. Head brownish-black, sparsely pruinose behind; front and anterior orbits narrowly ochreous.

Pronotum blackish-grey medially, pale on sides. Mesonotal praescutum with the four usual stripes grey, bordered by blackish, the latter especially clear and evident as internal borders to the intermediate stripes; lateral borders of praescutum broadly brownish-black, margined internally by a narrow yellow line that forms an outer border to the lateral praescutal stripes; a capillary yellow median vitta on about the anterior two-thirds of praescutum; posterior interspaces darkened, concolorous with the stripes; posterior sclerites of notum chiefly brown; median region of scutellum yellowish; posterior and lateral margins of mediotergite broadly and conspicuously ochreous. Pleura ochreous, with a longitudinal brown stripe from cervical region to beneath the wing-root, becoming more diffuse behind; ventral pleurites and coxae with paler brown spots and streaks. Halteres brown, the knobs brownish-black. Legs with coxae as described; trochanters yellow; femora brownish-yellow, paler ventrally, the tips broadly blackened; tibiae and tarsi uniformly pale yellow. Wings tinged with brownish; cells C and Sc, together with the stigma, darker brown; outer ends of radial cells slightly infumed; m-cu and adjoining parts of Cu<sub>1</sub>, together with the anterior cord, narrowly seamed with brown; obliterative areas before stigma and across cell 1st M<sub>2</sub>; veins brown, except in obliterative areas. Venation: m-cu sinuous at posterior end, placed just before midlength of M<sub>3+4</sub>.

Abdominal tergites chiefly dark brown, each slightly brightened medially at base; lateral borders broadly, the caudal margins more narrowly pruinose; sternites pale yellow, the intermediate segments a little darkened medially, the outer segments uniformly darkened except for narrow pale margins; terminalla and its appendages paler, especially outwardly.

Holotype, ♂, Rabaul, January, 1933 (F. H. Taylor).

This fly is readily told from regional allies of the *umbrinus* group by the unusually produced flagellar segments, which here are fully as developed as in the *serratus* group.

#### TIPULA Linnaeus.

##### PAPUATIPULA, n. subgen.

Frontal prolongation of head elongate, subequal to the remainder of head; nasus distinct. Antennae 13-segmented; flagellar segments with verticils that greatly exceed the segments in length. Tibial spurs long and conspicuous; formula 1-2-2. Wings (Fig. 1) with Rs unusually short but not transverse, approximately two-thirds m-cu; R<sub>2+3</sub> very long and straight, exceeding twice m-cu; R<sub>1+2</sub> entirely atrophied or represented only by a short basal spur; vein R<sub>4</sub> elongate, lying unusually close to the costal border of wing, subequal in length to R<sub>2+3</sub>; cell 1st M<sub>2</sub> elongate, its inner end strongly pointed; cell M<sub>1</sub> deep; m-cu uniting with M<sub>2+4</sub> some distance before its fork, usually at near midlength of the vein. Macrotrichia of veins beyond cord unusually sparse and scattered, there

being a loose series on  $R_{4+5}$  and  $M_1$ ; squama naked. Male terminalia with the tergite separated by a suture from the sternite, fused only at extreme cephalic portion; basistyle fused with sternite. Tergite notched medially. Outer dististyle (Fig. 9) armed with a spinous apical point. Eighth sternite unarmed. Ovipositor with pointed, sclerotized valves.

Type of subgenus.—*Tipula* (*Papuatipula*) *novae-britanniae*, n. sp. (Australasian: Papuan subregion).

Other included species: *Tipula* (*Papuatipula*) *divergens* de Meijere, *T. (P.) leucosticta* Alexander, *T. (P.) meijereana*, new name (for *dentata* de Meijere, preoccupied), and *T. (P.) omissinervis* (de Meijere).

Most nearly allied to the subgenera *Acutipula* Alexander, *Indotipula* Edwards, and *Tipulodina* Enderlein; most readily told by the tibial-spur formula, the venation, and the fundamentals of structure of the male terminalia. This group of the genus *Tipula* has proved to be the most widespread and characteristic of those occurring in New Guinea and will probably be found to include numerous species when the Papuan fauna is better known. In their general appearance, the various forms bear a marked resemblance to one another and are best separated by the characters of the male terminalia.

#### TIPULA (PAPUATIPULA) NOVAE-BRITANNIAE, n. sp.

General coloration of mesonotum obscure yellow, the praescutum with three slightly more fulvous stripes that are indistinctly bordered by darker; wings with a greyish tinge; both cells C and Sc dark brown, concolorous with the stigma and narrow apical border in outer radial cells; seams at anterior cord and on m-cu scarcely evident; petiole of cell  $M_1$  very short, about one-half m; male hypopygium with the outer dististyle a flattened blade, near outer end produced into a powerful blackened spine.

♂. Length about 15 mm.; wing, 16.5 mm. ♀. Length about 22 mm.; wing, 19 mm.

Frontal prolongation of head orange; nasus with conspicuous black setae; palpi brown, paler at incisures and at outer end of terminal segment. Antennae with scape and pedicel yellow; flagellum bicolorous, the bases of the individual segments black, the remainder yellow, the bicolorous nature continued to the very end of the organ. Head pale brown, the inner border of eye narrowly yellow; midline of vertex with a narrow dark vitta.

Ground-colour of mesonotal praescutum obscure yellow, with three slightly more fulvous stripes that are narrowly and indistinctly bordered by darker; median stripe without an evident dark median vitta, as in other species of the subgenus; central portions of scutal lobes chiefly obscure orange, the mesal portions more infuscated; scutellum a little infuscated; mediotergite chiefly yellow. Pleura yellow. Halteres elongate, brown, the basal fifth of stem yellow. Legs with the coxae and trochanters yellow; remainder of legs dark brown; femoral bases rather narrowly more obscure yellow, the intermediate portions yellowish-brown, the tips dark brown. Wings (Fig. 1) with a greyish tinge; both cells C and Sc dark brown, concolorous with the stigma and a narrow apical border in cells  $Sc_2$  and  $R_2$  to the wing-tip; anterior cord and m-cu very narrowly and inconspicuously seamed with darker; veins brownish-black. Venation:  $R_{1+2}$  entirely atrophied; petiole of cell  $M_1$  very short, about one-half m; inner end of cell 1st  $M_2$  strongly pointed; m-cu at or shortly before  $M_{3+4}$ .

Abdomen with intermediate tergites having a glabrous basal ring of a greyish colour, contrasting with the fulvous-orange ground-colour of the tergites; a narrow, transverse yellowish ring immediately caudad of the glabrous ring, this in turn followed by a darker brown band; sternites more uniformly yellow. Male terminalia with the tergite (Fig. 9, *9t*) bearing a flattened lobe on either side of a small median notch; apices of lobes obliquely truncated and set with small blackened spines. Outer dististyle (Fig. 9, *od*) unusually broad and flattened, the cephalic margin near outer end produced into a powerful blackened spine. Inner dististyle with the main blade yellow, somewhat reniform, the outer margin with a single to partly double row of long yellow setae that are angularly bent near tips; at base of blade with two blackened lobes, as shown (Fig. 9, *id*).

Holotype, ♂, Toma, altitude about 1,000 feet, February, 1933 (F. H. Taylor). Allotopotype, ♀.

The nearest allied species is *Tipula (Papuatipula) meijereana*, n. name (*dentata* de Meijere, preoccupied by *Tipula dentata* Meigen, 1838), of South-western New Guinea, which is somewhat similarly coloured yet differs in the details of venation and structure of the male terminalia.

#### NEPHROTOMA FUMISCUTELLATA, n. sp.

General coloration yellow; occipital brand brown; pronotum entirely pale yellow; mesonotal praescutum yellow, with three dull velvety-black stripes, the median one with the posterior portion and a median extension on to anterior portion shiny plumbeous; scutellum of a medium brown, the base narrowly yellow; femora brownish-yellow; wings strongly tinged with yellowish-brown; basal five abdominal segments almost uniformly reddish-yellow, the extreme caudal borders blackened, the outer abdominal segments black.

♂. Length, 12-13 mm.; wing, 11.5-12.3 mm. ♀. Length, 17-18 mm.; wing, 13-14 mm.

Head yellow; occipital brand brown. Antennae with scape and pedicel yellow; flagellum black throughout.

Pronotum entirely pale yellow. Mesonotal praescutum yellow, with three dull velvety-black stripes, the median one with the posterior half and a further median extension cephalad almost to front border of stripe shiny plumbeous; lateral stripes dull velvety-black, the extreme antero-lateral ends more plumbeous; scutum pale yellow, each lobe chiefly covered by two confluent dull black areas; scutellum chiefly median brown, the base narrowly yellow; mediotergite yellow, the posterior border with a rectangular brown area that is narrowly bordered by darker brown. Pleura yellow, variegated by more reddish on the ventral anepisternum and ventral sternopleurite. Halteres faintly dusky, the knobs chiefly pale yellow. Legs with the coxae and trochanters reddish-yellow; femora brownish-yellow; tibiae brown, somewhat darker outwardly; tarsi passing into black. Wings (Fig. 2) strongly tinged with yellowish-brown, especially before the cord, the outer portions of wing without the yellow tints; stigma oval, brown; veins brown, more yellowish-brown in the flavous areas. Venation: Cell  $M_1$  sessile.

Basal five abdominal segments almost uniformly reddish-yellow, the extreme caudal borders of the basal four tergites narrowly darkened, more broadly so in female; more than outer half of tergite five blackened; remaining segments of abdomen black, the dististyles yellowish.

Holotype, ♂, Toma, altitude about 1,000 feet, February, 1933 (F. H. Taylor). Allotype, ♀, Rabaul, December, 1932 (F. H. Taylor). Paratypes, 1 ♂, with the allotype; 3 ♀, Keravat, January, 1933 (F. H. Taylor).

*Nephrotoma fumiscutellata* is allied to a number of Papuan species that have a somewhat similar pattern on the mesonotal praescutum, these including *N. dimidiata* (de Meijere), *N. melanura* (Osten Sacken) and *N. speculata* (de Meijere), all four species differing among themselves in details of coloration. The present fly is closest to *N. speculata*, differing in the strongly tinted wings and the brown coloration of the scutellum. Of the three species listed above, *N. dimidiata* has the scutellum entirely black; *melanura* entirely yellowish-red; *speculata* dull black, with the base yellow.

MEGISTOCERA FUSCANA (Wiedemann).

1821. *Nematocera fuscana* Wiedemann, *Dipt. Exot.*, i, 29.

Widely distributed throughout the Indo-Malayan Islands, as far north as Luzon, Philippine Islands, eastward into north-eastern Australia.

1 ♀, Rabaul, December, 1932 (F. H. Taylor).

LIMONIINAE.

LIMONIINI.

LIMONIA (LAOSA) FALCATA, n. sp.

Antennae yellow, the scape black; legs yellow, the extreme bases of tibiae black; wings with apex narrowly falcate, whitish subhyaline, with two broad crossbands and abundant brown dots in most cells; supernumerary cross-veins in cells  $R_3$  and  $R_5$ .

♂. Length about 9 mm.; wing, 11 mm.

Rostrum black; palpi with basal segments black, the small terminal two segments pale brown. Antennae with scape black; pedicel and flagellum orange-yellow, the narrowed apical half of the terminal segment brown; flagellar segments oval, the outer ones becoming more elongate; longest verticils subequal to the segments. Head with front silvery; posterior vertex brownish-grey, with a capillary dark brown median line; eyes contiguous at a single point on anterior vertex.

Pronotum brown. Mesonotal praescutum with four orange-brown stripes that are narrowly bordered by dark brown, the intermediate pair confluent in front, ending squarely some distance before the suture; lateral stripes with anterior ends bent laterad to margins; humeral region and posterior portion of praescutum more whitish pruinose, the latter traversed by two orange-brown extensions of the intermediate stripes; scutum blackened medially, the lobes with two dull orange areas that are narrowly bordered by brown; scutellum whitish, with a median brown triangle, the point directed cephalad; mediotergite chiefly covered by a dark triangle, its point directed caudad, the lateral angles more intensely darkened; a greyish area on each posterior portion of mediotergite. Pleura light grey, extensively variegated by brown, involving all of anepisternum, with smaller areas on sternopleurite, pteropleurite, pleurotergite and meron; a few yellow setae on sternopleurite. Halteres pale yellow, the knobs dark brown. Legs with coxae brownish-yellow, the mid-coxae more pruinose; trochanters yellow; femora yellow, the tips insensibly darker; tibiae yellow, the bases very narrowly but conspicuously blackened; tarsi yellow, the terminal segments darker, especially the fourth; claws with basal spine and microscopic denticles. Wings

(Fig. 3) whitish subhyaline, with two broad broken brown fasciae and numerous brown dots in most cells; basal band across proximal fourth of wing, beginning narrowly at R, widened behind, broadest in cell M, again narrowed where crossing the cubital and anal cells, reaching posterior margin in cell 2nd A and again at end of vein 2nd A; outer band very broad, virtually traversing the wing and extending from before cord to beyond the level of outer end of cell 1st  $M_2$ , in cell  $R_5$  extending to beyond the supernumerary cross-vein; the latter band variegated by ground-areas in base of cell  $R_5$  and more extensively in cell 1st  $M_2$ ; a more fulvous arm extends from the outer band across the radial field to cell  $R_2$ ; tips of longitudinal veins at margin extensively seamed with fulvous-yellow; all interspaces of wing, except near apex, with abundant brown dots, in cases more crowded and becoming confluent; veins yellow, more reddish-yellow in certain places, especially the outer radial field. Wings of unique conformation in the genus, falcate, the tip narrowed to a point at end of vein  $R_{2+3}$ , thence strongly incised. Costal fringe relatively short; macrotrichia of veins abundant, lacking on 1st A excepting a small group at apex. Venation:  $Sc_1$  ending about opposite  $R_{2+3}$ ,  $Sc_2$  at its tip; free tip of  $Sc_2$  and  $R_2$  both pale, the former more than its length beyond  $R_2$ ,  $R_{1+2}$  continued beyond it as a conspicuous spur provided with macrotrichia;  $R_s$  straight, oblique; supernumerary cross-veins in cells  $R_3$  and  $R_5$ , the former more oblique and lying more distad; cell 1st  $M_2$  widened outwardly, m straight, transverse, a little shorter than the arcuate basal section of  $M_3$ ; m-cu more than its own length beyond fork of M; anal veins divergent, converging only at bases.

Abdomen with basal tergite pale orange; remainder of tergites dark brown, the caudal margins slightly paler; basal half of segment two more testaceous-yellow. Male terminalia (Fig. 10) of the usual type of the subgenus; tergite, 9t, with caudal margin nearly transverse; ventral dististyle, *vd*, with prolongation long and slender, the two spines from a pale tubercle at base of prolongation; face of ventral dististyle with a long pale lobe that is tipped with elongate yellow setae.

Holotype, ♂, Rabaul, January, 1933 (F. H. Taylor).

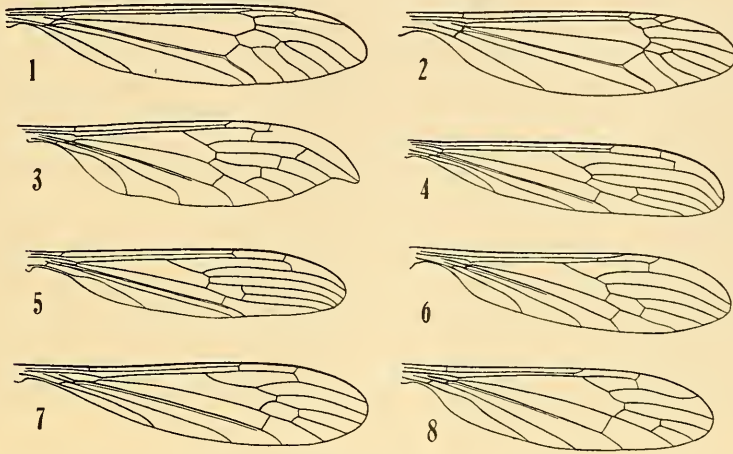
I refer this very distinct fly to the subgenus *Laosa* Edwards (*Encycl. Ent.*, Diptera, 3, 1926, 48), where it is most closely allied to *Limonia* (*Laosa*) *manobo* Alexander (Mindanao), differing in the abundantly dotted, falcate wings, coloration of the antennae and legs, and numerous other characters. If *Laosa* is to be maintained as distinct from *Libnotes*, its characters will have to be slightly modified so as to include all those species of the last-named subgenus having one or two supernumerary cross-veins in the outer radial field of the wing. Besides the subgenotype, *gloriosa* Edwards, and the two species above mentioned, the subgenus will include the following: *L. (L.) diphragma* Alexander (western China); *L. (L.) fuscineris* (Brunetti) (Himalayas, Western China); *L. (L.) regalis* (Edwards) (Formosa); *L. (L.) riedelella* Alexander (New Guinea); and *L. (L.) transversalis* (de Meijere) (Formosa to Java). The strongly falcate wings of the present fly are quite unique in the genus, but may well prove to be a male character only. The wing-tip of the unique type is slightly injured, but it is believed that the figure as given is nearly correct.

#### LIMONIA (LIBNOTES) SUTTONI, n. sp.

General coloration brownish-yellow, the mesonotum unmarked except for a dark area on either side of the mediotergite; knobs of halteres blackened; legs

yellow, the outer tarsal segments and very narrow tips of tibiae dark brown; wings yellow, sparsely variegated with brown; free tip of  $Sc_2$  more than twice its length before  $R_2$ ; inner ends of cells 2nd  $M_2$  and  $M_3$  about on a level; anal veins convergent at bases; male terminalia with the ventral dististyle small, oval, the rostral prolongation elongate, without definitely modified spines.

♂. Length about 14 mm.; wing, 15.5 mm.



Text-figs. 1-8.

1. *Tipula (Papuatipula) novae-britanniae*, n. sp., venation.
2. *Nephrotoma fumiscutellata*, n. sp., venation.
3. *Limonia (Laosa) falcata*, n. sp., venation.
4. *Limonia (Libnotes) suttoni*, n. sp., venation.
5. *Limonia (Libnotes) eboracensis*, n. sp., venation.
6. *Limonia (Libnotes) erythromera*, n. sp., venation.
7. *Limonia (Limonia) distivena*, n. sp., venation.
8. *Limonia (Dicranomyia) magnistyla*, n. sp., venation.

Rostrum brownish-yellow, darker medially; palpi pale yellow, the first segment darker basally. Antennae with scape and pedicel yellowish-brown, flagellum brown; basal flagellar segments globular, beyond the third becoming more oval, the outer segments rapidly passing into long-oval, the outer ones elongate; terminal segment long and slender, nearly twice the penultimate; verticils of intermediate segments about twice the segments alone. Head fulvous; anterior vertex reduced to a narrow strip that is only about one-fourth the diameter of the scape.

Mesothorax uniformly brownish-yellow, without markings, except for a brown spot on either side of the mediotergite. Halteres pale yellow, the knobs blackened. Legs yellow, the outer tarsal segments and very narrow apices of the tibiae dark brown; apices of femora with a dense group of setae. Wings (Fig. 4) tinged with yellow, very sparsely variegated with pale brown, as follows: Origin of  $R_s$ ; along cord and outer end of cell 1st  $M_2$ ; basal section of  $Sc_2$ ; free section of  $Sc_2$  and  $R_2$ ; outer portion of vein  $Cu$ , and tip of vein 2nd  $A$ ; a narrow infuscation at wing-apex in medial field; veins pale brown, darker in the clouded areas, in prearcular and costal fields clearer yellow. Costa incassated to apex of  $R_3$ , densely set with short trichia; vein  $R_1$  (between free apex of  $Sc_2$  and  $R_2$ ) with about nine macrotrichia.

Venation: Free apex of  $Sc_2$  more than twice its length before  $R_2$ ;  $R_{1+2}$  projecting slightly beyond  $R_2$  as a small spur bearing a single trichium;  $R_3$  bent very strongly caudad, terminating beyond wing-apex; r-m short; inner ends of cells 2nd  $M_2$  and  $M_3$  about on a level; m-cu at about one-third the length of cell 1st  $M_2$ ; anal veins converging near bases.

Abdominal segments obscure orange, the caudal borders of the intermediate segments very narrowly pale, preceded by a more blackish crossband. Male terminalia (Fig. 11) with the median area of caudal border of tergite,  $9t$ , very gently emarginate, the setae chiefly distributed along border. Ventral dististyle,  $vd$ , very small, its body subglobular to short-oval, prolonged into a slender, gently curved rostral prolongation; face of style with a small tubercle, the whole surface with unusually long, coarse setae, none of which is modified into a spine. Gonapophyses,  $g$ , with mesal-apical lobe straight, narrowed to an acute point.

Holotype, ♂, Keravat, January, 1933 (F. H. Taylor).

I take great pleasure in naming this distinct species in honour of Professor Harvey Sutton, Director of the School of Public Health and Tropical Medicine. By Edwards's key to the species of *Libnotes* (*Journ. Fed. Malay Str. Mus.*, xiv, 1928, 74-80), the present fly runs to couplet 28, where it disagrees with all species beyond by the nature of the wing- and leg-pattern, and, especially, the venation of the radial field of the wing. It agrees in some regards with *Limonia* (*Libnotes*) *sphagnicola* (Edwards), but is very distinct from this and all other described species known to me.

LIMONIA (LIBNOTES) EBORACENSIS, n. sp.

General coloration of thorax dark grey; palpi and antennal flagellum black; eyes of ♂ contiguous on anterior vertex; posterior vertex with a narrow black median line; legs reddish-brown; wings pale yellowish subhyaline, with three very pale brown, diffuse crossbands; m-cu at midlength of cell 1st  $M_2$ ; male hypopygium with the rostral prolongation of ventral dististyle bearing a series of four slender spines.

♂. Length about 11 mm.; wing, 12.5 mm.

Rostrum pale brown; palpi black, apparently only 3-segmented. Antennae with scape and pedicel dark brown, flagellum black; basal flagellar segments oval, with long, unilaterally arranged verticils that exceed the segments in length; outer flagellar segments becoming very long and slender. Head brownish-grey, the posterior vertex with a narrow blackish median line; anterior vertex more silvery; eyes contiguous for a short space on vertex.

Pronotum and mesonotum dark grey, somewhat clearer grey on lateral portions of praescutum and on pleura; praescutum with vague indications of stripes; pleurotergite somewhat paler and less pruinose. Halteres yellow, the knobs dark brown. Legs with the fore coxae darkened, the remaining coxae chiefly pale; remainder of legs reddish-brown, the outer tarsal segments blackened. Wings (Fig. 5) with the ground-colour pale yellowish-subhyaline, the prearcular and costal regions clear luteous; three diffuse but conspicuous, pale brown crossbands, the first very extensive, postarcular, occupying most of region before origin of  $Rs$ ; second band at and just beyond cord, extending from tip of  $Sc_1$  to posterior border, the centre of cell 1st  $M_2$  more or less pale; the third band is palest and least evident of all, occupying the wing-apex; seam at  $R_2$  heavier and more distinct; veins pale yellow, darker in the clouded areas.



Venation:  $R_1$  and  $R_2$  forming an evenly arcuated element beyond the free tip of  $Sc_2$ , the latter pale, erect; cells beyond cord long and narrow, the veins parallel; inner ends of cells 2nd  $M_2$  and  $M_3$  about in transverse alignment; m-cu at midlength of cell 1st  $M_2$ ; anal veins convergent at bases.

Abdomen with basal tergite yellow, the remaining segments deep orange-fulvous; centres of discs of individual tergites a little darkened; terminalia yellow. Male terminalia (Fig. 12) with the tergite,  $9t$ , narrowly transverse, the median region of caudal margin very restrictedly and shallowly emarginate; setae of tergite chiefly along caudal border, including a linear row of about eight on either side of median line. Basistyle,  $b$ , of moderate size. Ventral dististyle,  $vd$ , considerably smaller in area than basistyle, produced into a darkened rostral prolongation that bears near its base a linear row of four (or possibly five) slender spines with obtuse tips. Aedeagus,  $a$ , broad.

Holotype, ♂, Duke of York Island (Dr. Hosking).

*Limonia (Libnotes) eboracensis* is allied to species such as *L. (L.) subfasciata* Edwards (Buru) and *L. (L.) trifasciata* Edwards (Pahang) in the presence of pale but distinct crossbands on the wing. From the former species it is readily told by the coloration, together with the position of the m-cu crossvein; from the latter it is told by the grey coloration of the thorax, coloration of the head, and, especially, the structure of the male hypopygium. From the unique type, I am uncertain as to whether there are four or five rostral spines.

#### LIMONIA (LIBNOTES) ERYTHROMERA, n. sp.

General coloration reddish-yellow, the mesonotum, pleura and abdomen unmarked; rostrum, palpi and antennae black; knobs of halteres and legs chiefly brownish-black; wings subhyaline, the prearcular and costal regions more yellowish; stigma and a narrow apical border brown;  $R_s$  unusually straight and oblique for a member of this group; anal veins parallel at origin; male terminalia with two very unequal rostral spines.

♂. Length about 8.5 mm.; wing, 7.8 mm.

Rostrum and palpi black. Antennae black throughout; flagellar segments oval, becoming more elongate outwardly, the terminal segment about one-third longer than the penultimate; longest verticils unilaterally arranged, about one-half longer than the segments. Head black; eyes contiguous on anterior vertex.

Extreme cephalic portion of pronotum darkened; remainder of thorax, including pleura, reddish-yellow, only the ventral sternopleurite restrictedly blackened. Halteres short, pale, the knobs blackened. Legs with the coxae and trochanters reddish-yellow; femora with bases obscure yellow, more extensively so on posterior legs, soon passing into brownish-black; tibiae brownish-black, the tarsi more reddish-brown; claws with basal spine. Wings (Fig. 6) subhyaline, the prearcular and costal regions more yellowish; stigma small, subcircular, brown; wing-apex and margin as far as  $Cu_1$  narrowly suffused with blackish; veins black, more brownish-yellow in the costal and prearcular regions. Venation:  $h$  apparently lacking;  $Sc_1$  ending opposite midlength of  $R_{2+3}$ ,  $Sc_2$  far from its tip,  $Sc_1$  alone about two-thirds  $R_s$ ; free tip of  $Sc_2$  and  $R_2$  subequal, pale;  $R_s$  unusually straight and oblique for this group, about four times the basal section of  $R_{4+5}$ ; veins  $R_3$  and  $R_{4+5}$  extending parallel to one another to margin; m-cu at midlength of cell 1st  $M_2$ ; anal veins parallel at origin.

Abdomen reddish; terminalia with the ventral dististyles dusky. Male terminalia (Fig. 13) with tergite,  $9t$ , only gently notched, the margins of the

lobes thickened and provided with numerous setae. Ventral dististyle, *vd*, much larger than the basistyle; rostral prolongation stout, with two very unequal spines, the innermost a mere seta that is about two-thirds the length of the outer. Gonapophyses, *g*, with mesal-apical lobe blackened, the margin microscopically roughened into pale spinous points.

Holotype, ♂, Makada Island, Duke of York Group, February, 1933 (F. H. Taylor).

By Edwards's key to the species of *Libnotes* (l.c.), the present fly runs to couplet 61, disagreeing with the species involved and all others since described, in the uniform reddish coloration of the thorax and abdomen. The general appearance, course of the anal veins, and structure of the male terminalia, are all much as in *Limonia* (*Libnotes*) *novae-britanniae* (Alexander), *L. (L.) parvistigma* (Alexander), *L. (L.) semitristis* (Alexander) and *L. (L.) tayloriana* Alexander, all of the Australian and Papuan subregions, but the coloration of the body, wing-pattern, straight Rs, and shallowly emarginate tergite of the terminalia readily serve to distinguish the present fly from other similar forms.

LIMONIA (LIBNOTES) TAYLORIANA Alexander.

*Ann. Mag. Nat. Hist.*, (10) v, 1930, 149.

Known before only from the male sex, taken at Mossman, North Queensland, March, 1927, by F. H. Taylor.

One ♀, Keravat, January, 1933 (F. H. Taylor).

LIMONIA (LIBNOTES) OBLIQUA (Alexander), var.

*Libnotes obliqua* Alexander, *Rec. South Australian Mus.*, ii, 1922, 232.

Three ♂, Rabaul, January, 1933 (F. H. Taylor). One ♀, Keravat, January, 1933 (F. H. Taylor).

♂. Length about 5.5-5.8 mm.; wing, 6.4-6.8 mm. ♀. Length about 5.5 mm.; wing, 6 mm.

These specimens differ from the type (Cairns district, North Queensland) in the distinct, dark brown, median praescutal stripe, which contrasts conspicuously with the yellow to golden-yellow remainder of praescutum, the lateral stripes being obsolete or nearly so.

Much uncertainty still exists as to the exact limits of the species or races that centre about the fly formerly called *nervosa* de Meijere. This problem has been outlined briefly by Edwards (*Insects of Samoa, Nematocera*, part vi, fasc. 2, 1928, 80) and by the present writer (*Arch. für Hydrobiol.*, suppl. Band 9, *Tropische Binnengewässer*, ii, 1931, 160). Members of the complex range from Ceylon (*immaculipennis* Senior-White) throughout the Greater Sunda Islands (*nervosa* de Meijere) into North Queensland (*obliqua* Alexander, *subaequalis* Alexander) and thence to certain of the major oceanic island groups (*manni* Alexander, Solomons; *samoensis* Alexander, Samoa).

The name *nervosa* de Meijere (*Tidj. voor Ent.*, liv, 1911, 36) unfortunately is preoccupied by a prior usage of the name in the same paper (l.c., p. 26) and, in my opinion, both names are homonyms of a still earlier use of the name *nervosa* in the comprehensive generic concept *Limonia* (*Limnobia*). The next available name for a member of the group is *samoensis* Alexander (*Bull. Brooklyn Ent. Soc.*, xvi, 1921, 9), common and well known in the Samoan group. Of this species, or race, Edwards had rather abundant material for study, and this showed a surprising range in character of size, coloration and venation,

together with marked differences between the sexes. Small males tended to resemble the females in venation and stigmal size rather than the larger and more highly developed males. This unusual range in size and coloration makes it doubtful whether, in the above complex, we are dealing with a group of closely allied and generally similar species or whether these are nothing but subspecies or forms of a single species of great geographic range. The type of structure of the male terminalia is generally similar in all of these species in which the organ has been studied, but the same statement holds true for most other members of *Libnotes* where, on terminalian characters, the abundant species fall in only a few groups, showing a curious monotony of structure. This latter case especially holds true in the typical form of *Libnotes*, where a peculiar type of terminalia is found, and which, moreover, recurs in two other supposedly valid subgenera (*Laosa* Edwards, typical *Limonia* Meigen). If it is found that members of the *samoensis* group now under discussion represent but one or few species, then it seems certain that there will occur a similar and even more drastic consolidation of species names in other groups of *Libnotes*. Males of the species or subspecies of the present group in the Australasian region may be separated by the accompanying key.

1. Median praescutal stripe obsolete, the laterals continued across the suture on to the scutal lobes ..... *samoensis* Alexander  
 Median praescutal stripe distinct, the laterals present or obsolete ..... 2
2. Radial and subcostal cells basad of stigma strongly suffused with brown .....  
 ..... *manni* Alexander<sup>1</sup>  
 No infuscation in the cells basad of stigma ..... 3
3. All elements of anterior cord of wings subequal in length and lying subtransverse to the length of wing ..... *subaequalis* Alexander<sup>2</sup>  
 Elements of cord more oblique, Rs either distinctly longer or lying more proximad than the other elements ..... *obliqua* Alexander<sup>3</sup>

LIMONIA (LIBNOTES) SOLOMONIS (Alexander).

*Libnotes solomonis* Alexander, *Ann. Mag. Nat. Hist.*, (9) xiii, 1924, 39.

Described from the Solomon Islands. Rabaul, two ♂, one ♀, December, 1932, to January, 1933 (F. H. Taylor).

This species is allied to *notata* (van der Wulp), but is readily told from this species and all others in the group by the broad, conspicuous, black bases of all tibiae, in conjunction with the undarkened apices of the same. The vestiture of the femora is reduced to very short spinous setae. Apices of cerci bidentate.

LIMONIA (LIMONIA) SUBALBITARSIS Alexander.

*Philippine Journ. Sci.*, xli, 1930, 299.

Described from Luzon, Philippine Islands. One ♂, Keravat, January, 1933 (F. H. Taylor).

LIMONIA (LIMONIA) DISTIVENA, n. sp.

General coloration dark brown, the pleura somewhat paler than the central portions of the mesonotum; antennae black throughout, the flagellar segments moniliform, each with short but conspicuous necks; wings tinged with brown, the small stigma a little darker; macrotrichia of veins long and conspicuous; inner end of cell 1st M<sub>2</sub> arcuated; m-cu unusually far distad, lying more than one-half its length beyond the fork of M.

<sup>1</sup> *Libnotes manni* Alex., *Ann. Mag. Nat. Hist.*, (9) xiii, 1924, 41.

<sup>2</sup> *L. subaequalis* Alex., *Ibid.*, (9) viii, 1921, 554.

<sup>3</sup> *L. obliqua* Alex., *Rec. South Australian Mus.*, ii, 1922, 232.

♀. Length about 3.2 mm.; wing, 4 mm.

Rostrum and palpi black. Antennae black throughout; flagellar segments very strongly moniliform, the segments globular, with short glabrous black necks; outer segments more oval, but similarly pedicellate; longest verticils unilaterally arranged and exceeding the segments. Head dark grey.

Mesonotum relatively gibbous, projecting cephalad over the small pronotum. Pronotum dark brown. Mesonotum dark brown, the praescutum somewhat paler laterally. Pleura brown, the propleura slightly darker. Halteres with stem black, the base narrowly pale, the knobs broken. Legs with the coxae brown; trochanters testaceous; remainder of legs broken. Wings (Fig. 7) tinged with brown, the small, short-oval stigma a little darker brown; veins darker brown. Macrotrichia of veins long and conspicuous, including all longitudinal veins beyond cord; all of Rs excepting the extreme base; distal half of main stem of M; distal third of basal section of Cu<sub>1</sub> and extreme tips of both anal veins. Venation: Sc<sub>1</sub> ending about opposite two-thirds to three-fourths the length of Rs, Sc<sub>2</sub> at its apex; free apex of Sc<sub>2</sub> pale, lying a little basad of level of R<sub>2</sub>; inner end of cell 1st M<sub>2</sub> arcuated; m-cu more than one-half its length beyond the fork of M; cell 2nd A narrow.

Abdominal tergites brownish-black; sternites paler, brownish-yellow. Cerci slender, the tips acute.

Holotype, ♀, Keravat, January, 1933 (F. H. Taylor).

The present fly is most nearly allied to the Philippine *Limonia* (*Limonia*) *retrusa* Alexander, being told from this and other small similar members of the subgenus by the distal position of m-cu.

LIMONIA (GERANOMYIA) MANCA (Alexander), var.

*Geranomyia* (*Geranomyia*) *manca* Alexander, *Ann. Mag. Nat. Hist.*, (9) xiii, 1924, 180.

One ♂, Toma, altitude about 1,000 feet, February, 1933 (F. H. Taylor).

Close to the typical form (North Queensland) but differing in having the outer field of wing darkened to the wing-tip; m-cu fully its own length beyond the fork of M, exceeding in length the distal section of Cu<sub>1</sub>; vein 2nd A at near midlength, gently but distinctly concave. Male terminalia with the tergite narrow, transverse. Ventral dististyle very large and fleshy, much larger than in *argentifera* and allies; apex of rostral prolongation beyond the spines short and stubby. Dorsal dististyle long and unusually slender, strongly arcuated. Gonapophyses with the mesal-apical lobe slender, but provided with setae, as in all members of the *sorbillans* group.

LIMONIA (IDIOGLOCHINA) NEAR NOVOCALÉDONICA Alexander.

*Limonia* (*Idioglochina*) *novocaledonica* Alexander, *Encycl. Entomol.*, Dipt., v, 1929, 90.

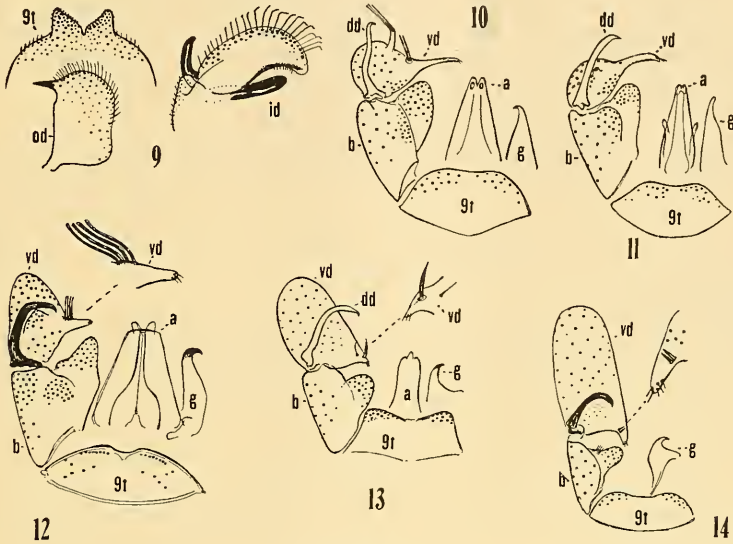
One broken ♂, Duke of York Island (Dr. Hosking).

LIMONIA (DICRANOMYIA) MAGNISTYLA, n. sp.

Belongs to the *punctulata* group; nearest to *kulin*; thorax dark grey; the praescutum with an ill-defined median stripe; femora brown, the tips very narrowly and abruptly yellow; wings of ♂ with long, conspicuous costal fringe; male terminalia with ventral dististyle very large and fleshy; rostral spines two, unusually short.

♂. Length about 3.8 mm.; wing, 4.3 mm.

Rostrum and palpi black. Antennae black throughout; pedicel enlarged; basal flagellar segments globular, the outer ones passing into oval. Head brownish-grey; anterior vertex reduced to a linear strip that is about one-half wider than a single row of ommatidia.



Text-figs. 9-14.

- 9. *Tipula (Papuatipula) novae-britanniae*, n. sp., male hypopygium, details.
- 10. *Limonia (Laosa) falcata*, n. sp., male hypopygium.
- 11. *Limonia (Libnotes) suttoni*, n. sp., male hypopygium.
- 12. *Limonia (Libnotes) eboracensis*, n. sp., male hypopygium.
- 13. *Limonia (Libnotes) erythromera*, n. sp., male hypopygium.
- 14. *Limonia (Dicranomyia) magnistyla*, n. sp., male hypopygium.

Thorax uniformly dark grey or dark plumbeous, the praescutum with a very ill-defined brown median stripe that is divided behind. Halteres pale, the base of knobs restrictedly darkened. Legs with the coxae brown; trochanters obscure yellow; femora dark brown, the bases restrictedly obscure yellow, the apices very narrowly and abruptly obscure yellow; tibiae paler brown; tarsi chiefly obscure yellow, the outer segments darkened. Wings (Fig. 8) with the ground-colour greyish-white, the prearcular and costal portions to apex clear pale yellow; a restricted grey spotted pattern, arranged as in the *punctulata* group; about three such spots in cell C beyond the humeral area; a dark spot at midlength of cell R<sub>2</sub>; veins pale brown or yellowish-brown, darker in the infuscated areas. Costal fringe (at least in ♂) very long and conspicuous. Venation as in group.

Abdomen dark brown. Male terminalia (Fig. 14) with the tergite, *9t*, transverse, the caudal margin very shallowly emarginate. Basistyle, *b*, small. Ventral dististyle, *vd*, very large and fleshy, its greatest length nearly equal to two and one-half times that of the dorsal dististyle; rostral prolongation small, with two unusually small spines placed on the side of the prolongation, near the lower margin; spines shorter than the diameter of the prolongation at point of insertion;

distance between spines shorter than the diameter of either. Gonapophyses, *g*, with the mesal-apical angle a slender curved hook.

Holotype, ♂, Rabaul, February, 1933 (F. H. Taylor).

The present species is readily told from all allies in the small size, long costal fringe and the structure of the male terminalia, especially the ventral dististyle and its rostral armature. The species having the terminalia and costal fringe most similar is *Limonia* (*Dicranomyia*) *kulin* Alexander (Victoria and New South Wales), a much larger fly with unvariegated costal region and with the spines of the rostral prolongation conspicuously more elongate.

LIMONIA (PSEUDOGLOCHINA) HOSKINGI, n. sp.

Mesonotum dark brown, the ventral thoracic pleura blackened; posterior femora uniformly blackened; all tibiae white, with two dark rings, the more basal one narrower on fore and hind tibiae, broader on mid-tibae; wings with cell 2nd  $M_2$  deep, nearly twice its petiole; vein 2nd A unusually short and arched.

♀. Length about 6 mm.; wing, 6.3 mm.

Head broken.

Mesonotum dark brown, not or scarcely variegated by paler. Pleura chiefly blackened, including the entire sternopleurite, the dorsal pleurites more testaceous-brown. Halteres broken. Legs with the coxae obscure yellowish-testaceous; trochanters a little darker; fore femora obscure brownish-yellow, narrowly tipped with dark brown; mid-femora chiefly infuscated on basal half, thence passing into dirty white, becoming restrictedly pure white just before the narrow dark-brown apices; posterior femora entirely blackened; all tibiae pure white, the fore and hind pair each with two narrow black rings, the more basal one narrower and somewhat paler than the outer or post-medial band; on mid-tibiae, the basal black ring is much more extensive than the outer, being fully twice as wide, about two-thirds as extensive as the white enclosed annulus; tarsi white. Wings (Fig. 15) greyish-subhyaline; stigma oval, very distinct; veins brownish-black. Venation:  $Sc$  relatively short,  $Sc_1$  ending shortly before origin of  $Rs$ ,  $Sc_2$  some distance from its tip,  $Sc_3$  alone longer than  $Rs$ ; cell 2nd  $M_2$  deep, nearly twice its petiole; vein 2nd A unusually short and arched.

Abdominal tergites dark brown; sternites pale yellow.

Holotype, ♀, Rabaul, February, 1933 (F. H. Taylor).

I take pleasure in naming this species after Dr. Hosking, who collected several Tipulidae near Kokopo, New Britain. This is the first species of the subgenus from the Australasian region having two dark tibial rings, the two forms hitherto made known, *Limonia* (*Pseudoglochina*) *laticincta* (Edwards), of Samoa, and *L. (P.) pulchripes* (Alexander), of North Queensland, having a single darkened ring. From Malayan species having a single tibial annulus, as *L. (P.) kobusi* (de Meijere), of Java, and *L. (P.) unincinctipes* (Alexander) of Borneo and the Philippines, the present fly is amply distinct. The Oriental species having two tibial rings, as *L. (P.) bilator* Alexander, *L. (P.) bilatissima* Alexander, *L. (P.) pictipes* (Brunetti), *L. (P.) riukiensis* Alexander, and others, are readily told by the details of wing- and leg-pattern and the venation.

LIMONIA (THRYPTICOMYIA) ARACHNOPHILA (Alexander).

*Dicranomyia* (*Thrypticomyia*) *arachnophila* Alexander, *Philippine Journ. Sci.*, xxxiii, 1927, 301.

Described from the Philippines. Keravat, January, 1933, February, 1933 (F. H. Taylor).

## LIMONIA (EUGLOCHINA) NOVAE-GUINEAE YORKENSIS, n. subsp.

Similar to typical *novae-guineae* in the large size (wing, ♂, more than 11 mm.); thorax reddish-brown; halteres and abdomen black; proximal third of basitarsus black, the remainder of tarsi yellowish-white.

♂. Length about 13 mm.; wing, 11.5 mm.

Rostrum and palpi brownish-black. Antennae black throughout; flagellar segments elongate-oval, very slender. Head dark brown.

Thorax reddish-brown. Halteres black. Legs with the coxae and trochanters reddish-brown; femora brownish-black, obscure yellow basally; fore tibiae brown, middle and hind tibiae brownish-black to black; basitarsi with a little more than the proximal third black, the remainder of tarsi yellowish-white. Wings (Fig. 16) hyaline, the tip weakly infumed; stigma oval, darker brown; veins brownish-black. Venation as shown.

Abdomen black.

Holotype, ♂, Duke of York Islands (Dr. Hosking).

The typical form of *Limonia (Euglochina) novae-guineae* (de Meijere), *Tijd. voor Ent.*, lviii, 1915, 101, Pl. 1, fig. 7, wing-apex) differs in the uniform brownish-yellow coloration of the body, including the abdomen; yellowish tibiae and basitarsi, and the yellow halteres. The type of this form was from "Hollandia", on the west coast of Humboldt Bay, Northern New Guinea (2° 32' 29" S. Lat., 140° 44' 12" E. Long.).

## HELIUS (RHAMPHOLIMNOBIA) PAPUANUS Alexander.

*Philippine Journ. Sci.*, liv, 1934 (in press).

A part of the type-material of this species was from Laup, New Britain (Dr. Hosking).

## HEXATOMINI.

## ELEPHANTOMYIA (ELEPHANTOMYODES) TAYLORIANA, n. sp.

General coloration black; halteres and legs black throughout; wings strongly suffused with blackish; cell 2nd A very long and narrow; abdomen black, the bases of the segments broadly greyish-nacreous.

♂. Length, excluding rostrum, about 6.5 mm.; wing, 7 mm.; rostrum, 3.5 mm.  
♀. Length, excluding rostrum, about 6 mm.; wing, 5.5 mm.; rostrum, 2 mm.

Rostrum black, about one-half the length of body in male, much shorter in female, as shown by measurements. Antennae black, the verticils very long and conspicuous. Head blackish.

Thorax entirely polished black. Halteres black. Legs with the coxae blackish on outer faces, the inner faces and all trochanters more brownish-testaceous; remainder of legs, including all tarsi, black. Wings (Fig. 17) strongly suffused with blackish, especially the basal region and cells C and Sc; origin of Rs and cord seamed with darker brown, more broadly so in male; veins black. Venation: Rs perpendicular at origin; anterior branch of Rs running very close to main stem; m-cu from about one-half to three-fourths its length beyond fork of M; cell 2nd A very long and narrow.

Abdomen conspicuously ringed with black and greyish-nacreous, the latter colour occupying the bases of the segments and involving a little less than one-half the segments; terminalia black. Ovipositor with the cerci black, only the extreme apices pale; hypovalvae black on basal half, the distal end bright horn-yellow.

Holotype, ♂, Keravat, January, 1933 (F. H. Taylor). Allotype, ♀, Toma, altitude about 1,000 feet, February, 1933 (F. H. Taylor).

*Elephantomyia* (*Elephantomyodes*) *tayloriana* is named in honour of the collector of this valuable series of Tipulidae, Mr. F. H. Taylor. It is strikingly different from the other species with black feet in the body-coloration and unusually long and narrow cell 2nd A of the wings. The Australian *E. (E.) fumicosta* Alexander (Queensland-Northern New South Wales) is readily told by the snowy-white tarsi.

## ERIOPTERINI.

## CONOSIA IRRORATA (Wiedemann).

*Limnobia irrorata* Wiedemann, *Aussereur. zweifl. Ins.*, i, 1828, 574.

One example of this widespread crane-fly, Keravat, January, 1933 (F. H. Taylor).

## TRENTEPOHLIA (TRENTEPOHLIA) PICTIPENNIS Bezzi.

*Trentepohlia pictipennis* Bezzi, *Philippine Journ. Sci.*, xii, D, 1917, 115.

The present specimens greatly extend the known range of the species to the east. One ♀, Rabaul, January, 1933 (F. H. Taylor). One ♂, Keravat, February, 1933 (F. H. Taylor).

The rather numerous species of *Trentepohlia* now known from New Britain may be separated by the following key:

1. Wings with cell 1st  $M_2$  closed; three outer medial veins,  $M_{1+2}$ ,  $M_3$  and  $M_4$ . . . . . 2  
Wings with cell 1st  $M_2$  open by the atrophy of  $m$  and the two distal sections of  $M_3$ ;  
two outer medial veins,  $M_{1+2}$  and  $M_4$  (*Trentepohlia* Bigot) . . . . . 7
2. Vein  $R_3$  atrophied (*Plesiomongoma* Brunetti) . . . . . *novae-britanniae*, n. sp.  
Vein  $R_3$  preserved (*Mongoma* Westwood) . . . . . 3
3. Apices of femora black or only vaguely brightened . . . . . 4  
Apices of femora and bases of tibiae broadly and conspicuously white . . . . .  
. . . . . *australasiae* Skuse
4. Tibiae entirely dark, not dilated at tips . . . . . *brevipipes* Alexander  
Apices of tibiae whitened; mid-tibiae conspicuously dilated at tips in *pennipes* and  
*subpennata* . . . . . 5
5. Basitarsi not darkened . . . . . *pennipes* (Osten Sacken)  
Basitarsi blackened, at least on proximal ends . . . . . 6
6. Costal fringe of wings long and conspicuous, especially in male; cell  $R_2$  at wing-  
margin less than one-half as extensive as cell  $R_3$ ; tibiae not dilated at tips;  
basitarsi darkened only at extreme bases; mid and hind femora with spines at  
bases . . . . . *costofimbriata*, n. sp.  
Costal fringe short in both sexes; cell  $R_2$  at wing-margin very wide, more extensive  
than cell  $R_3$ ; tibiae, especially the middle pair, conspicuously dilated at outer  
ends; basitarsi extensively blackened; mid and hind femora without spines  
. . . . . *subpennata*, n. sp.
7. Basal abdominal segments orange, the terminal segments black . . . . .  
. . . . . *trentepohlai* (Wiedemann)  
Abdomen black throughout . . . . . *pictipennis* Bezzi

## TRENTEPOHLIA (PLESIOMONGOMA) NOVAE-BRITANNIAE, n. sp.

General coloration pale yellow, the mesonotum a little darker; legs brown, the narrow tips of tibiae and all tarsi snowy-white; wings whitish-subhyaline, unmarked.

♂. Length about 6 mm.; wing, 6 mm.

Rostrum pale yellow, whitish-pruinose; palpi pale yellow. Antennae with basal two segments yellow; flagellum broken. Head very pale grey; anterior vertex reduced to a strip.



Pronotum pale yellow. Mesonotum chiefly pale reddish-brown, the scutal lobes and posterior portions of mediotergite darker brown; scutellum and median area of scutum more testaceous-yellow. Pleura pale yellow. Halteres yellow throughout. Legs (middle legs broken) with coxae and trochanters pale yellow; femora and tibiae pale brown, the apices of tibiae (distal eighth or less) and all tarsi snowy-white; fore femora with a linear group of four black setae near base, the outermost more powerful; in addition to these, with scattered, semi-erect black setae distributed throughout the length of the segment; posterior femora with a series of about 15 short, spine-like setae in a linear row near base, with additional, gradually more elongated setae distributed at increasing intervals throughout the length of the segment. Wings (Fig. 18) whitish-subhyaline, unmarked; veins pale brownish-yellow. Venation: Inner ends of cells  $R_5$  and  $M_3$  lying somewhat more basad than that of 2nd  $M_2$ ; m-cu shortly before fork of M.

Abdominal tergites pale brownish-yellow; sternites somewhat paler.

Holotype, ♂, Rabaul, January, 1933 (F. H. Taylor).

The occurrence of *Trentepohlia (Mongoma) pennipes* (Osten Sacken) in New Britain makes it advisable to compare the two flies critically, since it seems very obvious that the present species has been derived directly from species like *pennipes* through the total loss of vein  $R_3$  of the wings. Edwards (*Journ. Fed. Malay Str. Mus.*, xvi, 1931, 499) has recorded a specimen of *pennipes* from Borneo in which vein  $R_3$  is entirely lacking, making the specimen conform to the characters of *Plesiomongoma*. I have likewise seen specimens of *pennipes* with this abnormality, either on a single wing or on both wings. The present fly differs from *pennipes* in the pale wing veins, very narrow white tibial tips, and the evenly arcuated vein  $R_4$ , this vein in *pennipes* showing a slight angulation at the point of departure of vein  $R_3$ . The known species of the subgenus may be separated by the following key:

1. Wings with cell 1st  $M_2$  open by atrophy of m; mid-tibiae near apex with long, conspicuous fringes or paddles of black and white setae (Pahang, Sumatra, Borneo) ..... *nigropennata* Edwards  
 Wings with cell 1st  $M_2$  closed; legs without modified hair fringes ..... 2
2. Wings with veins pale, stigma lacking; halteres yellow throughout; legs pale brown, the tarsi and narrow tips of tibiae white; no brightening of genua (New Britain) ..... *novae-britanniae*, n. sp.  
 Wings with veins black, distinct; cord more or less seamed with darker; halteres with darkened knobs; legs not patterned as above ..... 3
3. Legs pale brown; femoral tips and tibial bases broadly white; tibiae chiefly white, in cases a little darkened beyond base; tarsi snowy-white (Selangor, Borneo) ..... *candidipes* Edwards.  
 Legs bright yellow; tips of fore femora blackened (Assam) .... *venosa* (Brunetti).

TRENTEPOHLIA (MONGOMA) PENNIPES (Osten Sacken).

*Mongoma pennipes* Osten Sacken, *Berlin. Ent. Zeitschr.*, xxxi, 1887, 204.

Keravat, January, February, 1933 (S. V. Bayley and F. H. Taylor). Toma, altitude about 1,000 feet, February, 1933 (F. H. Taylor).

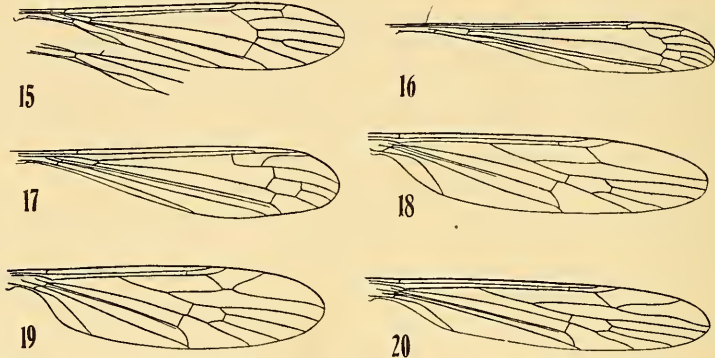
TRENTEPOHLIA (MONGOMA) COSTOFIMBRIATA, n. sp.

Mesonotum and pleura dark cinnamon-brown, the praescutum with a capillary brownish-black vitta on anterior half; femora black; tibiae black, the outer half paler, the apices narrowly pale yellow; tarsi yellowish-white, the extreme proximal ends of basitarsi darker; spines on bases of middle and hind femora; hind basitarsi with three or four long black setae at base; wings with a dusky tinge,

cells C and Sc blackish; wing-apex narrowly darkened; veins black; costal fringe (male) long; all elements closing cell 1st  $M_2$  subequal.

♂. Length about 5.5–6 mm.; wing, 6–6.5 mm. ♀. Length about 6 mm.; wing, 6.5 mm.

Rostrum and palpi brownish-black. Antennae black throughout; flagellar segments cylindrical, the verticils shorter than the segments. Head brownish-black; anterior vertex reduced to a narrow strip.



Text-figs. 15-20.

15. *Limonia* (*Pseudoglochina*) *hoskingi*, n. sp., venation.
16. *Limonia* (*Euglochina*) *novae-guineae yorkensis*, n. subsp., venation.
17. *Elephantomyia* (*Elephantomyodes*) *tayloriana*, n. sp., venation.
18. *Trentepohlia* (*Plesiomongoma*) *novae-britanniae*, n. sp., venation.
19. *Trentepohlia* (*Mongoma*) *costofimbriata*, n. sp., venation.
20. *Trentepohlia* (*Mongoma*) *subpennata*, n. sp., venation.

Cervical sclerites and pronotum dark brown. Mesonotum and pleura dark cinnamon-brown, the praescutum with a capillary brownish-black vitta on anterior half; scutal lobes slightly more darkened; scutellum dark brown; anterior pleurites slightly darker than the posterior ones. Halteres brownish-black, the base of stem a little paler. Legs with the fore coxae dark brown, the remaining coxae and all trochanters yellowish-testaceous; femora black; tibiae black basally, the outer half paling to dirty brownish-white, the extreme tips narrowly and conspicuously pale yellow; tarsi yellowish-white, the basitarsi very restrictedly darkened at proximal ends; middle femora in both sexes with a group of from 16 to 17 short black spines at base; hind femora with about 10 to 12 such spines; fore femora without spines; posterior basitarsi of both sexes with a group of about 3 or 4 long black setae at extreme base. Wings (Fig. 19) with a dusky tinge, cells C and Sc, except basally, strongly suffused with blackish; stigma not otherwise darkened; wing-apex narrowly more darkened; a dusky area between anal veins near bases; veins black. Costal fringe of male very long and conspicuous, short only on basal sixth or so; in female, fringe shorter but still longer than usual in the genus. Venation:  $R_{2+3+4}$  longer than  $R_s$ ; vein  $R_2$  oblique, so cell  $R_2$  is wide at margin; all elements closing cell 1st  $M_2$  subequal; m-cu just before fork of M; apical fusion of veins Cu<sub>1</sub> and 1st A distinct.

Abdominal tergites dark brown; sternites obscure brownish-yellow; terminalia dark. Ovipositor with hypovalvae darkened at bases, the remainder yellowish horn-colour.

Holotype, ♂, Keravat, January, 1933 (F. H. Taylor). Allotopotype, ♀, pinned with type, paratopotype ♂.

*Trentepohlia (Mongoma) costofimbriata* is readily told from allied regional species by the long costal fringe of the wings. *T. (M.) fimbriata* Edwards (Borneo) likewise shows this character, but is otherwise a very different fly, without spines on mid-femora and with a very different venation of the radial field. By Edwards's key to the Australasian species of *Mongoma* (Ins. Samoa, Diptera Nematocera, vi, fasc. 2, 1928, 94), the present fly runs to couplet 5, disagreeing with both included species.

TRENTEPOHLIA (MONGOMA) SUBPENNATA, n. sp.

General coloration of mesonotum dark brown to brownish-black, the pleura obscure yellow; femora black, the apices very vaguely paler; tibiae black, the tips broadly snowy-white; basitarsi chiefly blackened, the remaining segments paling to yellowish-white; tips of middle and posterior tibiae dilated and fringed with conspicuous white setae; wings relatively long and narrow, faintly tinged with blackish, cell C and the stigma black; veins  $R_3$  and  $R_4$  only slightly divergent; cell  $R_2$  at margin more extensive than cell  $R_3$ .

♂. Length about 7.8–8 mm.; wing, 7–7.5 mm.

Rostrum and labial palpi pale yellow; maxillary palpi black. Antennae black throughout; flagellar segments cylindrical, with verticils that are shorter than the segments. Head black; anterior vertex reduced to a linear strip or even slightly interrupted by approximation of eyes.

Cervical sclerites and pronotum above dark brown, the latter yellow on sides beneath. Mesonotum dark brown to brownish-black, the humeral region of praescutum restrictedly and very vaguely brightened. Pleura obscure yellow, the propleura and anepisternum vaguely suffused with dusky. Halteres dark brown, the extreme base of stem pale. Legs with coxae yellowish-testaceous, the fore coxae a trifle darker; femora black, the extreme bases obscure yellow; tips of femora very vaguely paler, obscure yellowish-brown; tibiae black, the tips broadly snowy-white, slightly narrower on fore legs; basitarsi blackened, their extreme tips and the outer tarsal segments paling to yellowish-white; fore tibiae scarcely expanded at tips; hind, and especially the middle tibiae, conspicuously flattened and dilated, fringed with white setae that are shorter than the expanded portion; fore femora with three or four long erect black setae at some distance from base. Wings (Fig. 20) relatively long and narrow; ground-colour faintly blackish; cell Sc and the confluent stigma black; wing-tip insensibly darkened; veins black, very conspicuous. Costal fringe relatively short. Venation:  $R_2$  shortly before fork of  $R_{3+4}$ , the distance variable, longest in the holotype;  $R_3$  and  $R_4$  only slightly divergent, so cell  $R_3$  is narrow and parallel-sided for more than one-half its length; cell  $R_2$  at margin considerably more extensive than cell  $R_3$ ; vein  $R_4$  strongly sinuous; inner end of cell  $M_3$  slightly more basad than the other outer cells; m-cu close to fork of M; apical fusion of  $Cu_1$  and 1st A relatively extensive, nearly equal to m-cu; cell 2nd A long and narrow.

Abdominal tergites dark brown, the incisures of the intermediate segments vaguely paler; terminalia dark; sternites obscure yellow.

Holotype, ♂, paratopotype, ♂, Keravat, February, 1933 (F. H. Taylor).

By Edwards's key to the Australasian species of *Mongoma* (l.c., 1928, 94), the present fly runs to *tarsalis* Alexander. The present fly is very different from all other species known to me in the dilated tips of the middle and hind tibiae,

the black basitarsi, and the venation, as the only slightly divergent veins  $R_3$  and  $R_4$ . The key given on a preceding page will readily separate the species from others in New Britain.

TRENTEPOHLIA (MONGOMA) AUSTRALASIAE Skuse.

*Trentepohlia australasiae* Skuse, PROC. LINN. SOC. N.S.W., xiv, 1890, 834.

Toma, altitude about 1,000 feet, February, 1933 (F. H. Taylor). Makada Island, Duke of York Group, February, 1933 (F. H. Taylor).

The latter specimen has the thoracic dorsum paler, more reddish-brown, but I can detect no other differences.

TRENTEPOHLIA (MONGOMA) BREVIPES Alexander.

*Ann. Mag. Nat. Hist.*, (10) vii, 1931, 18.

The type, a female, was from Suali, Vailala River, Papua, collected by Littlechild. One ♂, Toma, altitude about 1,000 feet, February, 1933 (F. H. Taylor). The costal fringe is short.

STYRINGOMYIA CEYLONICA Edwards.

*Ann. Mag. Nat. Hist.*, (8) viii, 62, 1911.

One ♂, Karavat, December, 1932 (F. H. Taylor).

Edwards had previously (*Ann. Mag. Nat. Hist.*, (9) xiii, 1924, 270) recorded this species from Madang (Friedrich Wilhelmshafen), Seleo Is., off Aitape, and Aitape Roadstead (Berlinhafen), in north-eastern New Guinea, a notable eastward extension of the known range.

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